17 - Dec - 2018

* Panel Technique

⇒ Re-interview design

I IV $\xrightarrow[\text{days}]{15}$ II IV $\xrightarrow[\text{days}]{15}$ III IV

* Telephone Survey

Questions asken on the telephone.

Learning

1) classical Conditioning — 20
2) Instrumental conditioning — 20
3) Schedules of reinforcement — 15
4) Comparison IC vs CC — 10
5) Cognitive Learning — 20
6) Gestalt Approach — 10/15
7) Information Processing Approach — 10/15
8) Programmed Learning — 20
9) Discrimination — 10
10) Extinction — 10
11) Discrimination Learning — 15
12) Tolmen's cognitive Learning Theory or Sign Gestalt Theory — 15
13) Generalisation — 10
14) Probability Learning — 10

Learning → Relatively permanent change in behaviour that occurs as a result of practice or experience.

⇒ This definition was given by behaviourists

* (i) Learning involves change → good
→ bad

SHOUT
SHARE
IT

(ii) Change has to be relatively permanent.

(iii) practice or experience

Behaviourists ⟶	Cognitivists ⟶	Constructivists
Environmental Determinism	Triadic reciprocal determinism	Self Determined Learning
S – R	S – O – R	S — ◯ — R

⟶ Involvement of self is increasing ⟶

eg. Teacher-centric	collaborative	Student-centric

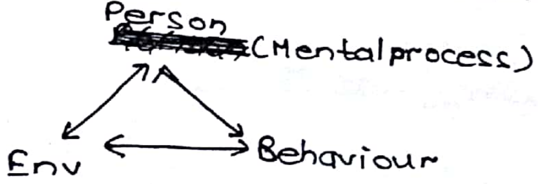
* Descartes :- S–R Approach

* (Associationists)

- → Pavlov → Theory of classical conditioning
- → Thorndike (Law of effect → Actions that are rewarded are repeated and actions that are punished are discontinued'

* Behaviourist's definition ignored covert events

* Triadic reciprocal determinism



⇒ Previously, sequential or serial processing ⟶ cognitivism

If Parallel Distributed Processing ⟶ Connectionism
(Neural Network)

* Learner constructs his/her own world ⟶ Constructivism

Piaget → Individual constructivism

Vigotsky → Social Constructivism

⇒ Social constructivism → External factors help the individual in constructing his world

*Another def. of learning

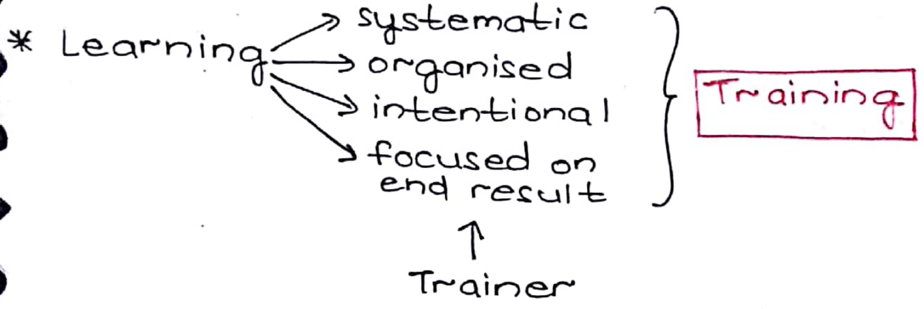
Relatively permanent change in behaviour or behaviour potentiality that occurs as a result of practice or experience.

In every learning:

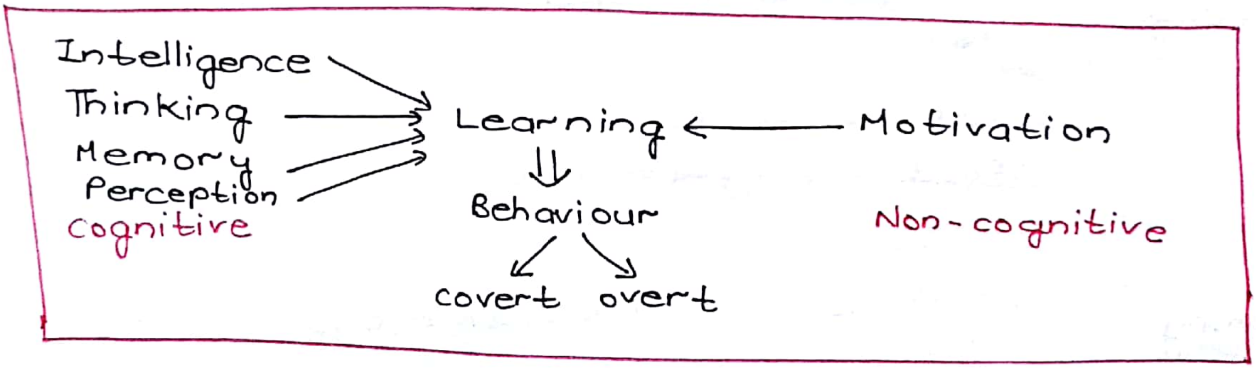
(i) contiguity → closer are the two stimuli in time & space stronger is the association bet. them

(ii) Practice

↳ more is the practice, greater is the learning, as the no. of practice trial increase, the association bet. the stimuli becomes stronger



* Learning
systematic
organised
intentional
focused on end result
Training
Trainer



Intelligence
Thinking
Memory
Perception
cognitive
Learning
Motivation
Non-cognitive
Behaviour
covert
overt

* Perception → sensation + meaning

* Classical Conditioning -

(Pavlov)

Original stimulus ⟶ Some response (R_1)

New stimulus (substitute stimulus) ⟶ No response

Then, SS+ OS (paired) ⟶ Same response (R_1)

NS ⟶ R_1 (original response ~~stimulus~~)

*contiguity :- very less time gap, substitute ~~stimulus~~ stimulus is just prior to original stimulus.

Classical conditioning is a procedure where in the responses that are automatically elicited by one stimulus are also elicited by subs. stimulus when it is consistently paired with the original stimulus by presenting it just prior to OS over the no. of trials.

→ It is a form of learning in which neutral stimuli come to cause a response through their association with the stimuli that naturally elicit the response.

CS	US	CR	UR
Conditioned stimulus	unconditioned Stimulus	Conditioned Response	Unconditioned Response

Before conditioning : CS (Bell) ⟶ No response

US (Food) ⟶ UR (salivation)

During conditioning : CS + US ⟶ UR (salivation)

After conditioning : CS (Bell) ⟶ CR (salivation)

Unconditioned stimulus → naturally elicits the response

Unconditioned Response → Response elicited by US

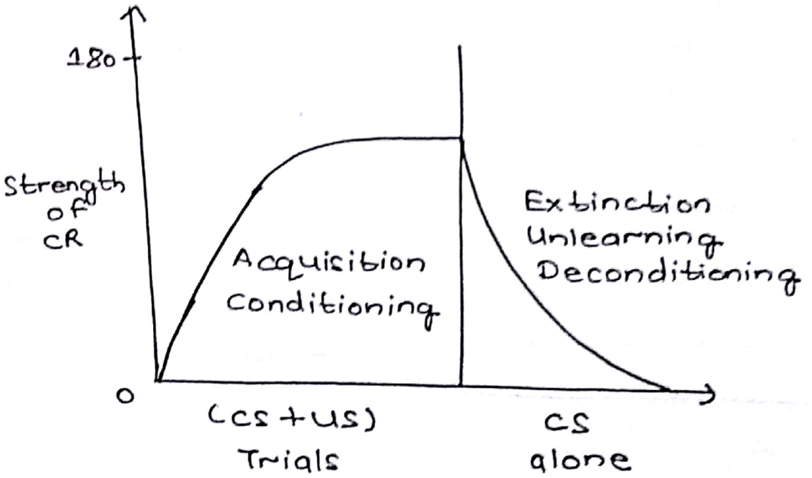
Conditioned Stimulus → stimulus that will elicit the response only when it has been consistently paired with US over a number of trials. It will lose its power if it is no longer paired by presenting it prior to the arrival of US.

Conditioned → Response elicited by CS
Response

*CS, US relationship is established only to reach CS – CR relationship. Thus, it is still S – R relationship (not S – S).

*Various Laws of classical conditioning

1) Law of acquisition
2) Law of extinction
3) Law of discrimination
4) Law of generalisation



*Law of acquisition

Acquisition is the process of acquiring the response. In most cases of classical conditioning, it is a gradual process in which CS acquires the capacity to elicit CR as a result of repeated pairing with the US. When acquisition period is over, the response gets firmly established into the behaviour pattern of the acquisition. Acquisitio of response is influenced by no. of factors:

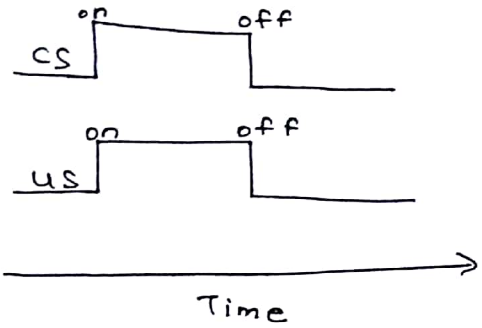
(i) Practice → The more are the number of CS–US pairings, the more firmly the response will get established into the system of the organism. It must however be stated that practice beyond a point produces diminishing results.

(ii) Temporal arrangement of CS – US pairing

a) Simultaneous   b) Delayed   c) Trace   d) Backward

a) Simultaneous
b) Delayed
c) Trace
d) Backward
} conditioning

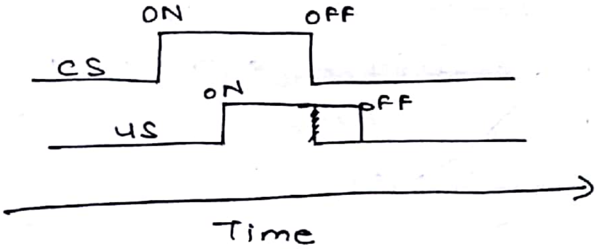
a) Simultaneous


on
off
CS
on
off
US
Time

→ Here large no. of trials will be required as the order of US & CS will not be known (Animal will not know that bell is a signal for food).

→ separate trial to check CS–CR relationship

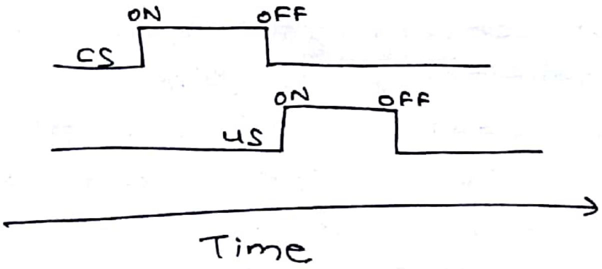
b) Delayed (aka forward)


ON
OFF
CS
ON
OFF
US
Time

→ Best way of conditioning.

→ This gives a clear indication of the relationship bet. CS & US.

c) Trace

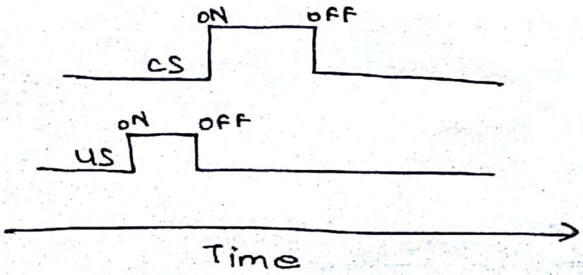

ON
OFF
CS
ON
OFF
US
Time

→ (relationship bet. the trace of CS in the brain & the US)

→ second best after delayed

→ Time diff. should be less otherwise trace will disappear

d) Backward


ON
OFF
CS
ON
OFF
US
Time

→ This cannot be used as there is no incentive to produce CR.

→ If Response is produced, than extraneous variable is present. This method was to crosscheck ~~th~~ (No response should be produced)

* How effective the method is can be determined by the resistance to extinction following the removal of US
Max. resistance is with delayed (This does not depend on how fast it is learned.

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Researches suggest that delayed conditioning is the most effective method for establishing the CR because CS plays an imp. role in predicting the forthcoming presentation of US. Conditioning is also influenced by CS-US interval. If time interval bet. 2 stimuli is extremely short conditioning becomes difficult. Likewise, very long intervals also make conditioning difficult because animal finds it difficult to make an association bet. CS & US. The optimal period is somewhere bet. 0.2 to 2 seconds. There is little evidence to suggest that backward conditioning can produce excitatory conditioned response. This is not surprising as associative processes ought to work forward in time. Backward conditioning therefore has been often used as a procedure to find whether proper conditioning has been established through the procedure of forward & simultaneous conditioning. Thus, Backward conditiong is taken as a case in which association will not form and therefore, it can help us check the effectiveness of other conditioning factors.

(i) Practice
(ii) Temporal arrangement
(iii) Intensity
(iv) familiarity

Intensity

⇒ Intensity of CS is relative to the background (High)
If intensity of US is high → learning will be fast but so will be unlearning as frustration will be more if reward

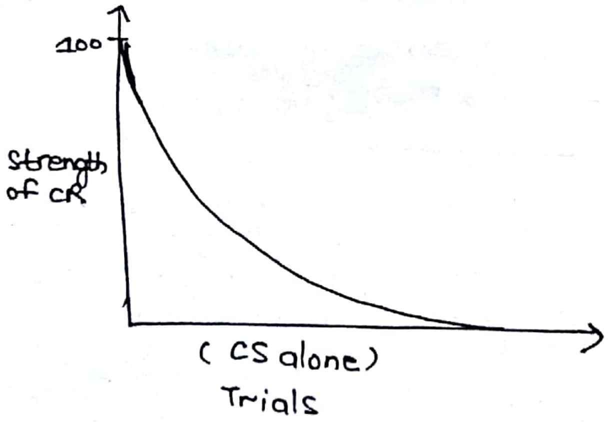
In general, conditioning is faster when the intensity of CS increases. It must however be stated more than the absolute intensity of CS, it is the intensity in relation to the background stimuli that assumes importance.

*Familiarity

It can affect conditioning in a way that the individuals may find it very difficult to learn new set of responses to the stimuli that they are familiar with as producing a particular kind of response eg. our day to day experiences teach us that certain stimuli such as background noise usually present in the office or certain odours present at home do not suggest anything unusual. In other words, we learn that these stimuli are largely irrelevant and it is difficult to make the subjects get conditioned to producing a new type of response to them.

Extinction (Law of Extinction)

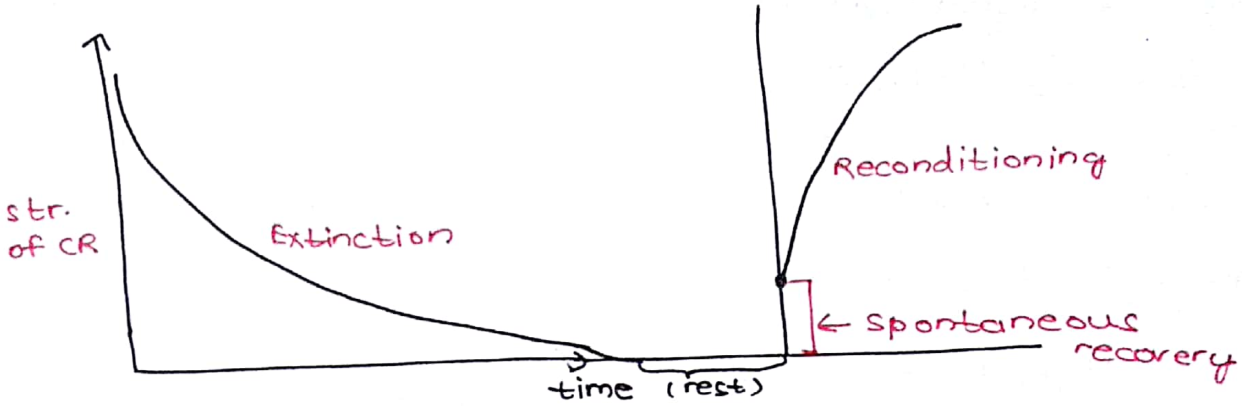
(Deconditiong/unlearning)



(i) CS was presented alone
(ii) over a no. of trials
(iii) Response tendency gradually declined
(iv) Animal finally stopped responding

(Behaviours can be learned, unlearned & relearned)

1) Post extinction, animal is given some rest.
2) Following the rest, CS is presented
3) Response produced by the animal was stronger than what was evident in the last few extinction trial.



(4) ~~I~~If animal is now provided CS & US again reconditionin would occur.

(5) Reconditioning is much faster than original learning or conditioning. (Extinction is never 100 %)

* Law of Discrimination

Case I

CS_1 (70dB Bell) → No response

US_1 (food) → UR (salivation)

CS_1 (70dB Bell) + US_1 (food) → UR (salivation)

CS (70dB Bell) → CR_1 (salivation)

Case II

CS_2 (80 dB Bell) + US_2 (shock) → fear & running away (CR_2)

CS_2 (80 dB Bell) → CR_2 (fear & running away)

So, animal learns to salivate when 70dB bell is rung & to run away when 80 dB Bell is rung. Thus discriminatio is selective responding i.e. giving one type of response to one stimulus & a diff. type of response to a diff. stimulus.

* [illegible]

If CS_1 & CS_2 distinction is blurred → experimental neurosis. (anxiety)

* circle → food

* ellipse → shock

Eventually, animal got confused and became anxious.

* Law of generalisation

Conditioned response is elicited by the stimuli that resemble the CS but were never paired with US.

⇒ (All problem solving & decision making) requires generalisation & discrimination.

* Generalisation can't happen just on the basis of physical characteristics (eg. emotional, etc.)

* Every Learning will not involve discrimination (it is not necessary) but for discrimination, learning is required.

* Extinction, discrimination & generalisation are parts of not just classical ~~&~~ conditioning but other types of learning.

* Theories that account for acquisition & Extinction

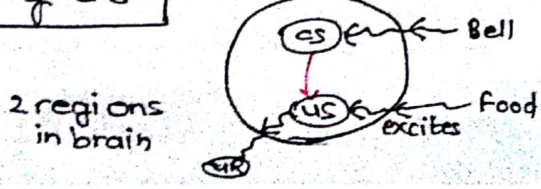
→ Acquisition
→ Extinction
(in classical conditioning)

1) Stimulus substitution Theory (Pavlov)

2) Information Expectation Theory

* Stimulus substitution Theory → to explain Acquision

⇒ CR is UR elicited by CS



* Over time bell achieves ability to excite US and produce UR

Problems with the theory -

~~ab~~ If CR is UR, their magnitude should be similar.

(But it was observed that CR & UR differ in ~~mag~~ magnitude and in type also)

CS (bell) ⟶ freezing (animal will be disappointed that it will get shock, when the shock begins, it has no option but to run away)

US (shock) ⟶ running

* Stimulus Substitution Theory ⟶ to explain extinction

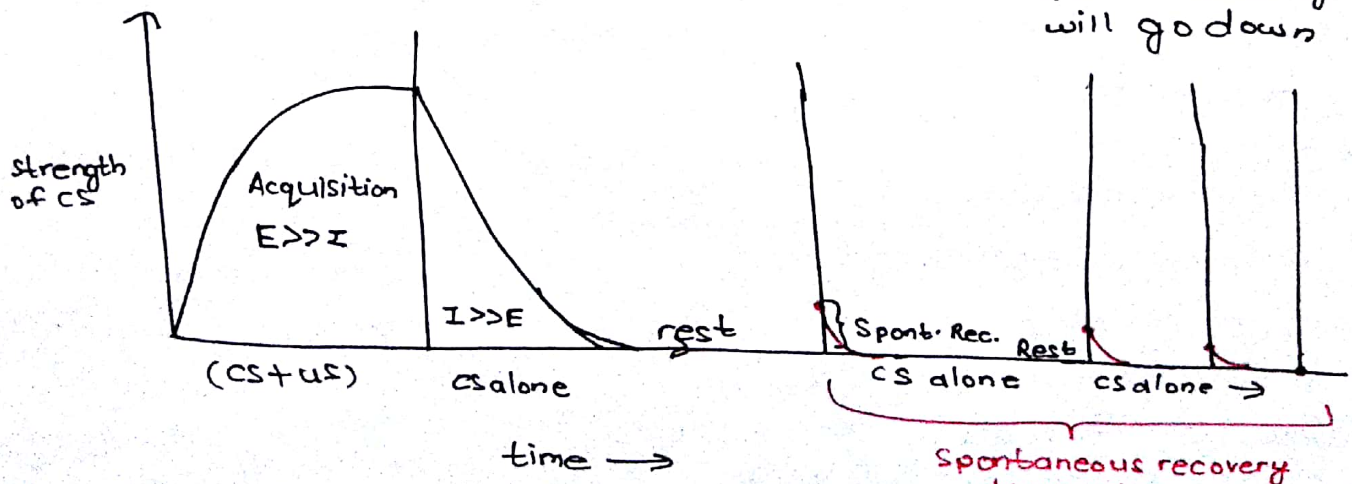
Extinction (2 tendencies in the animal) ⟶ excitatory (E) ⟵ +ve reinforcement (reward)

⟶ Inhibitory (I) ⟵ -ve reinforcement (punishment for not giving reward)

pairing the stimulus with

(Acquisition)
E >> I ⇒ +ve reinforcement excitatory tendencies dominate
~~I<<E~~
I >> E ⇒ -ve " inhibitory " "
(Extinction)

⇒ During rest, inhibitory tendencies that had accumulated would dissipate ⇒ Spontaneous Recovery → If this excitation is not rewarded, ~~inhibitory re~~ spont. recovery will go down



Spontaneous recovery decreasing without US (reinforcement)

* Information Expectation Theory

⇛ Acquisition → CS serves as a signal for US to follow (history in the memory tells that CS is followed by US).

⇛ Extinction ⟶ sustained presentation of CS without US, CS no longer serves as a signal for US.

After Rest ⟶ Bad memories will be erased (food not being given will be erased & again anticipation for food comes back)

If it is re-inforced, the connection is again formed in the memory.

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*Exceptions to classical conditioning

⇒ Conditioned Taste aversion
or
Learned flavour aversion

eg. dislike for a food once you have vomitted after eating it.

⇒ Reasons for it being exception

(i) One trial learning while conditioning is incremental
(Survival value → Nature will not allow you to repeat it.)

(ii) Time factor → Long time gap between CS & US

CS → Food

US → Nausea, Pain (Dislike for a food item cannot be a natural response, it is something which you have acquired)

(iii) One trial learning is very resistant to extinction

⇒ There is a biological preparedness for every learning.
eg. it is easy to develop fear for obnoxious looking insects.
(Rate of conditioning is different for different behaviours)

A type of conditioning in which US (usually the internal cues associated with Nausea & vomitting) occurs several hours after CS (often normal food) & leads to a strong CS-US association in a single trial. Conditioned taste aversions are imp. for survival because they inhibit the ingestion of toxic substances in the animal's natural env.
Among Human beings food & beverage aversions are common. Such aversions are usually very strong eg. many people even though they are convinced that particular food & beverage

was not the cause of illness that followed, continue to experience taste aversion to that substance. The way in which these powerful associations develop, differs from most classical conditioning in several imp. aspects.

(i) They are usually established in a single CS-US pairing & therefore can be termed as one-trial learning.

(ii) These aversions can occur even when CS was presented hours before the occurence of US.

(iii) They are extremely resistant to extinction & may even last a lifetime.

Different species show differences in the rate at which they can acquire CR. It has been found that human beings develop conditioned fear responses to dangerous looking animals like lizards much faster than relatively better looking animals like rabbits & cats. It has also been found that the type of conditioning most readily accomplished by one species is the one that it needs to survive in its natural habitat.

* Higher Order Conditioning

$CS_1 \longrightarrow CR_1$
(Bell) (salivation)

(Bell)
CS_1 (acting as US)
+ $\longrightarrow CR_1$ (salivation)
CS_2
(Light)

$CS_2 \longrightarrow CR_1$

CS acts as US for a new neutral stimulus

* It can happen to a certain level only.

*Pseudo conditioning

(In Lab) CS → CR (Running)
(Bell)

Same CS → CR not repeated
(Bell)
(In natural setting)

Not just the bell but the entire lab setting acted as CS.

An error had been introduced in the experiment.

In pseudo conditioning the entire experimental condition and not just the sound of bell alone becomes the CS, this type of conditioning usually occurs in fear responses. For such conditioning, contextual stimuli is very imp. It is called as pseudo because the behaviour is not conditioned to bell alone but rather the response is the artefact of the experimental situation.

* Applications of classical Conditioning

(i) Behaviour change
(ii) Acquisition of new behaviour
(iii) attitude formation & ~~of~~ change

eg. of prejudice development through conditioning

(CS) Black
+
frowning response by father
(US)
→ fear
UR

Black → Fear
(CS) (CR)

* Operant Conditioning

i) What is operant or instrumental conditioning
ii) Reinforcement (central)
iii) +ve Reinforcement (R), -ve R & ommission of R & Punishment
iv) Skinner's experiment
v) Shaping & chaining
vi) Schedules of Reinforcement
vii) Types of operant / instrumental conditioning
viii) Extinction, discrimination & generalisation
ix) Applications

Learner → performs some action → action has a consequence
↓
may increase or decrease the future occurence of the action

⇒ Instrumental because learner is instrumental in bringing a change in the env.

$$\begin{tikzcd}\text{Response} \arrow[r] & \text{Change in Env.} \arrow[l, bend right, "\text{+ve/-ve consequence}"']\end{tikzcd}$$

R – S conditioning

Note:- classical conditioning is S-S conditioning
S-R conditioning is an umbrella term

S-R – S
↑
Behaviourists provided this stimulus as they do not consider cognitive abilities (to ~~elicit~~ respond ~~Response~~ on its own)

eg. In Skinner's box, the rat was initially provided small food pellets to motivate it to venture around & reach the lever.

⇒ In classical condition S — S leads to S — R

⇒ Even, instrumental condition is R — S but eventually it is ~~R~~ S — R.

* There can be no response without motivation (Behaviouris Env. factor for

→ For neo-behaviourists, it can be a mental factor alsowhich motivates for response.

⇒ Skinner created the box in order to study re-inforced responding without breaking the exp. into discrete trials (Before it, there was a maze, again & again the animal entered & exited → the exp. was broken into trials)

⇒ ~~Disadvant~~ Shortcoming of behaviourists was there limited understanding of motivation ~~is~~ as env. based only.

* ~~Reinforcement~~

⇒ Diff. bet. classical & operant conditioning.

CC	IC/OC
(i) Elicit	(i) Evoke
(ii) Reflexive behaviours	(ii) Voluntary responses
(iii) Limited behaviours can be acquired	(iii) wide spectrum of responses can be acquired
(iv) Simple responses	(iv) Complex responses also
(v) Learner is passive	(v) Learner is active (in comparision ~~in relation~~ to cc)

* In classical cond. → elicit → no acquisition of a new response just association of an already present response with a new stimulus.

* IC / OC → a new response (not present in the system before) was learnt.

* In classical → animal will be rewarded without even respondi

In OC → animal has to respond in order to be rewarded

* Reinforcement

Any event or condition that follows the response & increases the likelihood of response being repeated.

→ It is in the env.

→ It always follows the response

→ Always increases the likelihood of the reponse being repeated

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a) Positive Reinforcement → Unlearned
→ Learning

b) ~~Positi~~ Negative Reinforcement → U
→ L

+ve reinforcement

Any pleasant event or condition that is the consequence of the response and that increases the likelihood of response being repeated.

→ Unlearned / Primary re-inforcer (US)

→ Learned / Secondary re-inforcer (CS)

*Anything that works when accompanied with primary is secondary.

⇒ Secondary re-inforcer is more imp. for humans (as they have better cognitive capacity)

+ve re-inforcement → primary → works automatically without any training
→ secondary → works only when animal has been trained & has to be paired with primary re-inforcer to have its effect.
eg. Money, Medal, etc

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-ve reinforcement :- Any event or condition whose termination is contingent on the response & which increases the likelihood of response being repeated.

Primary eg. running when shock is given
(US)

Secondary eg. shock and red light were paired ⇒ Even on seeing red light, running behaviour
(US) (CS)

~~(Event of staying there was terminated)~~

* Punishment & ~~Omm~~ Omission of Reinforcement

Punishment → Any aversive event or condition that follows the response ~~i~~decreases the likelihood of response being repeated.

Exercise ⟶ lowers sugar level (-ve reinforcement)

This decreases the response of laziness (Punishment)

In punishment it will lead to ~~tor~~ decrease in the response, in -ve reinforcement, it will lead to increase in the response.

Similarity ⟶ a) Both involve aversive stimulus
b) Aversive stimulus follows the response

* Punishment & -ve reinforcement ~~are same~~ can both be present with same aversive event, just depends on the response being observed ⟶ Both are the diff. sides of the same coin.)

* -ve reinforcement → Response is continued to ~~keep~~ prevent the aversive stimulus ~~away~~ from being administered.

Requirements of Punishment Method

(i) Intensity
(ii) Immediate/No delay bet. undesirable action & punishment
(iii) Schedule - consistency
(iv) Clarification & Justification

-ve impacts of punishment

(i) conditioned fear responses may be generalised.
(eg. little Albert dev. fear for all white furry objects)
(ii) Impairment of attention.
(Because of arousal created by punishment → attention will be narrowed)
(iii) Imitation of the aggresive response.
(iv) Learned helplessness.
(v) Reduced interest in the activity.

To make punishment effective, pair it with +ve reinforcement for the desired behaviour

Omission of Re-inforcement

It implies +ve reinforcement is withdrawn following the display of undesired behaviour.
[also called -ve punishment as we are withdrawing +ve reinforcement]

⇒ +ve punishment is to administer aversive stimulus

Shaping & chaining

* Shaping

→ Successive approximation → expedites the learning process
↳ involves differential reinforcement.

Not just final desired response will be reinforced but every stepin the direction of desired response will be

Concrete reinforcers externally administered → symbolic reinforcers externally administered → Self administered concrete reinf. → Self adm. symbolic reinf. → Activity itself becomes a reinforcer

extrinsic reinforcer | intrinsic reinforcer

*Chaining

X — Hi (response) — Hello (reinf.) Discriminative stimulus — How are you? (response) → Lovely & Like you (reinf.) (DS) → continues ....

* Chain of Response & Reinforcement

- Shaping is based on the principle that little can eventually go a long way. The organism undergoing shaping receives a reward for each small step towards the final goal rather than receiving the reward only for the final response. It is therefore a technique in which closer & closer approximation for the desired behaviour are required for the delivery of reinforcement. The subject is made to reach the desired behaviour by reinforcing the steps leading to it.

- Chaining refers to linking together the sequence of responses. The initial response in the chain provides the set of cues which become associated with & thus elicit the succeeding response and this process continues until full sequence is chained of. Chaining therefore can enable the organism to interlink various responses & ultimately acquire a set of complex responses. In chaining one response can bring the organism in contact with a stimulus that can act out as a discriminative stimulus for another response which in turn is followed by yet another stimulus which again serves as a DS for the next response and in this way, the process continues.

Schedules of Reinforcement

→ They are the contingencies that are designed to couple behaviour and reinforcement.

→ Rules that decide when & how reinforcement will be delivered.

*Two types:
(i) Simple
(ii) Compound

→ Simple :- Single type of reinforcement contingency maintained within constant parameters is in force throughout the experimental session. They are of 2 types:

a) Continuous reinforcement schedule
b) Intermittent or Partial " "

Partial Reinf Sch. → a) interval schedules
b) ratio schedules

Interval schedules → a) fixed interval
b) variable "

Ratio schedules → a) fixed ratio
b) variable "

* Simple eg. for every trial reinf. is provided after 5th pressing of liver.
  This will be same throughout the experimental session.

* Compound :- 2 or more contingencies may operate together which may either be independent or interdependent.

  eg. In trial 1 :- reinf after 5 mins.
  In " 2 :- reinf. after 5th pressing of liver.
  In " 3 :- reinf. after 7 mins.

  5responses & 5 mins :- In interdependent both conditions should be fulfilled.

  simultaneous :- both conditions in single trial

  successive :- one after another i.e. in successive trials conditions are applied one by one.

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*Continuous Reinforcement schedule

⇒ Every desired response during acquisition is reinforced or rewarded.

⇒ Humphrey told that when an animal is trained with CRS, when reinforcement is no longer provided, the resistance to extinction is lesser than that with partial reinforcement.

⇒ Partial Reinforcement effect

⇒ more frustration if animal is habitual to having reward everytime and suddenly it is stopped.

In partial reinforcement → only some of the correct responses are awarded
(But to establish understanding, animal is trained on CRS)

Types of Partial Reinf. Schedule

→ Interval schedule :- reinforcement is provided after the elapse of certain time period as measured from last reinforced response.

→ schedule is set up based on the time elapsed since the delivery of last reinforcement.

→ Ratio schedule :- reinforcement is provided after a certain no. of responses are emitted as measured from the last reinforced response.

Interval sch.
- → fixed interval (Time interval after which reinforcement is provided does not change from trial to trial)
- → variable interval (time interval varies from trial to trial)

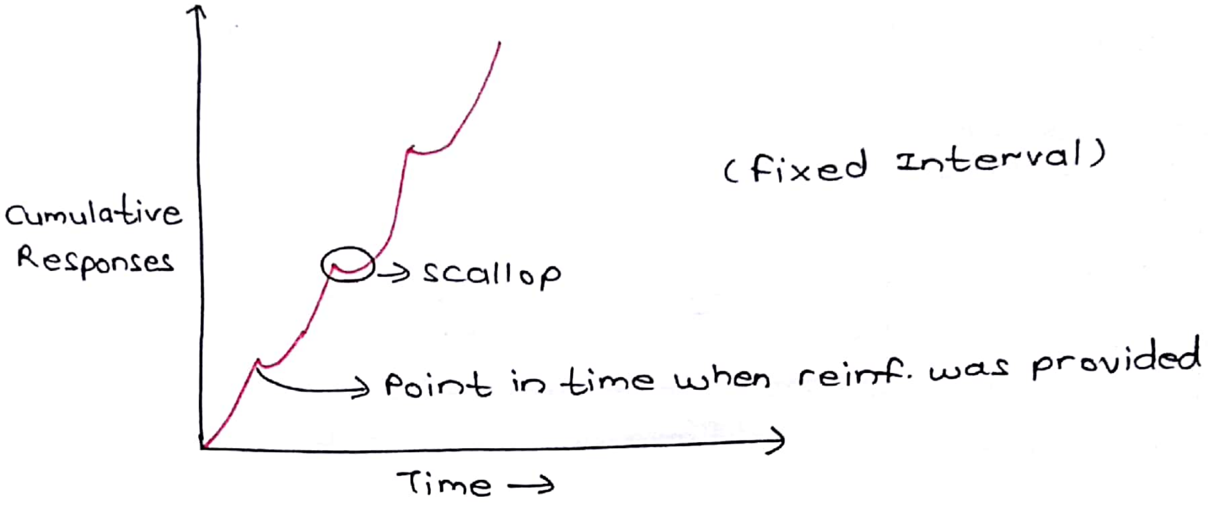
*In fixed interval, reinf. is provided after the Ist response emitted following the elapse of a specific time interval as measured from the last reinforced response & this time interval will not vary from trial to trial i.e. remains fixed ~~as~~ in each trial

1 pm ⟶ 1:15pm ⟶ 1:45pm ⟶ 1:55pm ⟶ 2:05pm
food pellet
↓
2:20pm

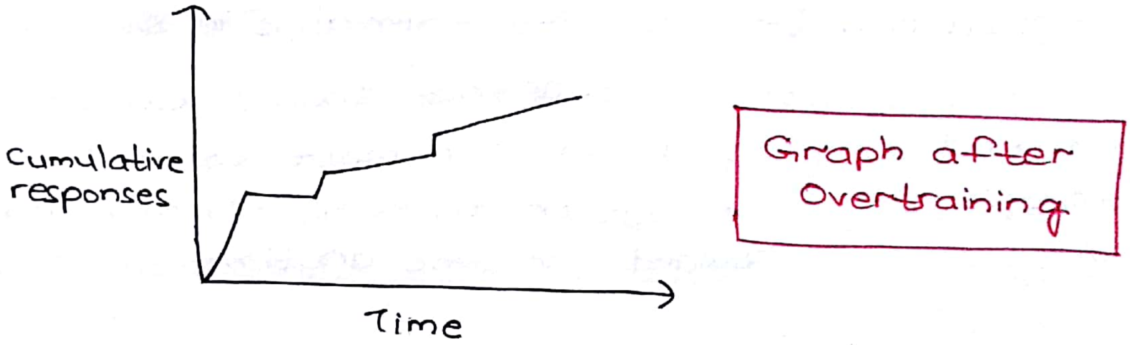
This ~~is~~ can be an example of fixed interval (for understanding) → Experimenter is ready with reinf. after 10 mins but is waiting for the animal to deliver the response (within 10 mins., it does not matter how many times the animal responds)

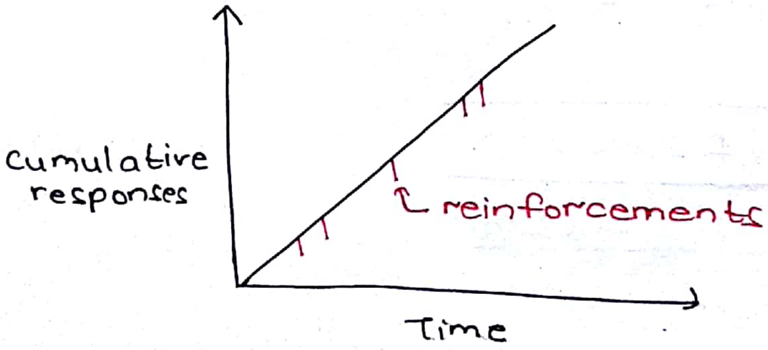
* Reinf. will be due but it waits for the response to be delivered.

* Fixed Interval does not work in real life eg. Method of promotion in govt. jobs [do not work during the interval]



*Post reinf. animal slows down & picks up the response near the end of time interval (lethargy).



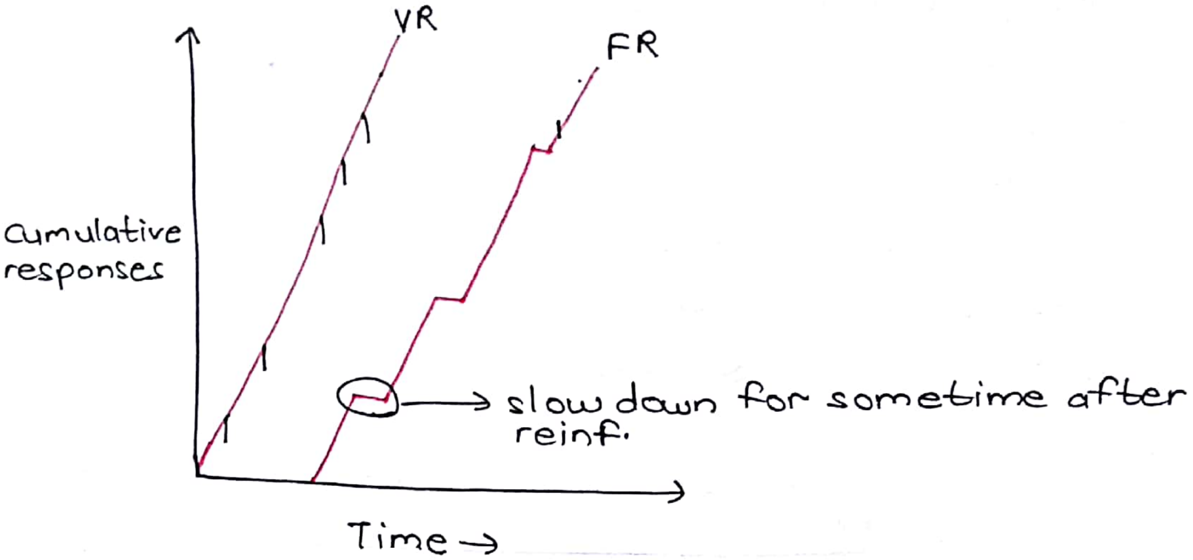


Fixed ratio

↳ reinf. occurs only after fixed no. of responses are emitted. In all the trials, the no. of responses to be provided before reinf. will be same.

*Variable ratio

↳ reinf. is delivered after variable no. of responses have been performed i.e. it varies from trial to trial.



→ Ratio reinf. is better as control of locus is internal as the animal realises that reinf. is in its control.

→ In variable interval :- The animal is in uncertainty
In fixed " :- animal shows lethargy
In fixed ratio :- animal is in most control

*Variable Ratio :- motivation to keep working hard, reward can come anytime
(Best)

⇒ In interval, arousal of animal is not in control unlike the case of ratio schedule

$\boxed{FI > VI > FR > VR}$

Ease of Extinction

VR :- max. resistance to extinction

*Compound schedule

They emerge when 2 or more simple schedules are combined, they may be sequential or simultaneous. In the sequential compound schedule, one type of reinf. schedule is in operation at one time &

this schedule varies from trial to trial. In simultaneous compound schedule, two or more schedules are operating together. These schedules might operate independently or might be interdependent. Compound schedules are complex & have the potential to confuse the animal, therefore, they are less popular than simple schedules.

* Types of Instrumental Conditioning

1) Reward Training

Discriminative cue is not available. Response comes to be produced & the reinforcement is based on reward.

2) Punishment Training

Discriminative cue is not available. Response ~~starts~~ comes to be withheld & the reinforcement is based on punishment.

⇒ No discriminatory cue → there is only one liver & it has to be pressed.

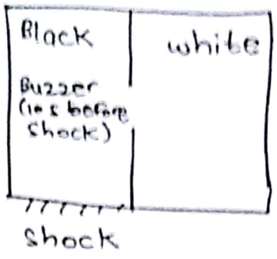
Eg. of discriminatory cue → 2 livers
→ white → reward
→ red → no reward

3) Discriminative Training

Dis. cue is available. Response comes to be produced & the reinforcement is based on the reward.

A dis. cue is a stimulus of some sort that tells the organism when reinforcement can be obtained & when it cannot be obtained. Generally the instrumental response will not be reinforced if it occurs when dis. cue is absent. In other words, dis. cue if it is used in an exp. sets an appropriate occasion for the behaviour that leads to reinforcement

4) Escape Training



example of classical + instrumental conditioning.

[phobia is also an example of this → Little Albert's case]

* Without buzzer (only shock) → escape training

* with buzzer 10s before Shock → avoidance training

(stimulus substitution acc. to Pavlovian method)
↳ rat will jump into white chamber even without the shock.

⇒ But the response to black & shock will not be exactly same as real shock involves anxiety.

⇒ unexpected stress is more painful than expected stress

*Escape training

In this training, dis. cue is not available. The response comes to be produced & reinf. is based on punishment. It might be reasonable to think of escape training as a special case of reward training on the assumption that escaping a noxious stimulus like shock is rewarding. The imp. point is that the procedure for escape training in instrumental conditioning depends upon the reinforcement operation which involves an aversive stimulus like shock & an active response which takes the organism away from the punishing stimulus.

* Avoidance Training

Dis. cue is available, the response comes to be produced & reinforcement is based on punishment. Animal is able to avoid the aversive stimulus by carrying out the necessary action during the warning period. ~~to~~ To begin with, animal shows escape learning & thereafter animal picks up the discriminative cue & produces the desired response to avoid punishment

* Omission Training

Dis. cue is not available. Response comes to be withheld and the reinf. is based on reward (its withdrowal)

* Discriminative Omission Training

Dis. cue is available. Response comes to be withheld and the reinf. is based on reward (its withdrawal) eg. if we choose light as a dis. cue, we can arrange the cues so that its onset sets an occasion for omitting the lever presses in order to obtain the reward and in the absence of dis. cue i.e. when the light is off, we can introduce simple reward training where the liver presses would produce food pellets.

* Discriminative Punishment Training

Dis. cue is available. Response comes to be withheld & reinf. is based on punishment. In this procedure, when the light is used as a dis. cue, its onset sets an occasion for avoiding punishment and when the light is off, then pressing the liver will lead to reward in the form of food pellets.

Extinction

When responses that were earlier followed by reward are no longer followed by reward. In other words, reward is removed from the earlier reinforced responses. Then the response tendency will gradually decline & animal will eventually stop responding.

⇒ Spontaneous recovery will happen here also as completely unlearning never happens.

Generalisation & Discrimination

- **Discrimination**

↳ Differential responding

eg. if key is pressed when light is on → food pellet
" " " " " No light → No food

- **Generalisation**

↳ instrumental response is emitted in other similar conditions in which animal has not been reinforced earlier.

↳ Applying instrumental response learned in one situation to other similar situations

Applications of Instrumental Conditioning

(i) Attitude formation & change
(ii) Behaviour " "
(iii) In behaviour therapy to help individuals replace their non adaptive behaviour with the more adaptive ones.

Generalisation

It is the process of giving similar responses to diff. or subtly different stimuli.

*Factors influencing gen.

(i) Practice → the greater the no. of practice trials, greater the gen. If practice trials are interspersed with rest periods, gen. is greater. In other words, spaced practice produces greater gen. than massed practice.

(ii) Schedules of reinf.

Partial reinf. sch. produces greater gen. than the continuous reinf. schedule.

(iii) Drive level (motivation)

Higher the drive level, greater is the generalisation

22-Dec-2018

Types

(i) Stimulus generalisation
(ii) Mediated generalisation
(iii) Response generalisation

⇒ (i) Stimulus gen. ⟶ CR is produced by the stimuli that resembles CS but have never been paired with US.

eg. CS (70dB Bell) ⟶ CR salivation

Now, Test $S_1 \rightarrow$ 80dB Bell   Test $S_2 \rightarrow$ 90dB Bell   (Both produce CR)

* The farther we go from CS, the association will be less

In kids, generalisation happens primarily on the basis of physical appearance as their cognitive abilities are not fully developed.

(ii) Mediated gen.

Style (CS) ⟶ No salivation

food (US) ⟶ Salivation (UR)

CS (style) + US (food) ⟶ Salivation (CR)

CS (style) ⟶ salivation (CR)

Homophone

→ Stile (3 drops of saliva)

→ fashion (6 drops)

⇒ lower with homophone & more with semantic equivalent

⇒ Meaning is more imp. ~~for~~ than physical attributes

→ Learner is active in mediated (semantic) gen. & relatively passive in stimulus gen. (phonetic)

*Response gen.

CS ——→ CR₁ (Dog) (flexing of the right forelimb ~~leg~~)
(70)
" " " left forelimb
" " " left & right hind limb
" " tail

⇒ Responses other than CR that are elicited by CS

CS → CR (learnt through training)
↘ other responses (not learnt through training)

Theories of Generalisation

(1) Failure of Association Hypothesis → (Lashley & Wade)
(2) Failure of Discrimination " → (Prokasy & Hall)
} Relationship bet. generalisation & discrimination

CS ——→ CR
70 dB
Bell

[Animal will associate the characteristics of the bell in its mind]

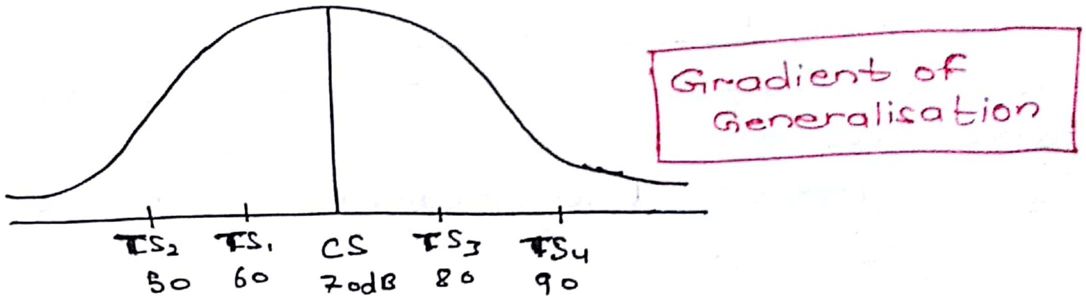
But association only considered the ~~stimulus~~ characteristic that was not encoded in the memory (eg intensity) but some characteristics were encoded eg. colour of the bell

Failure of Dis.

Test stimulus
&
CS
(Animal cannot discriminate & hence associate)

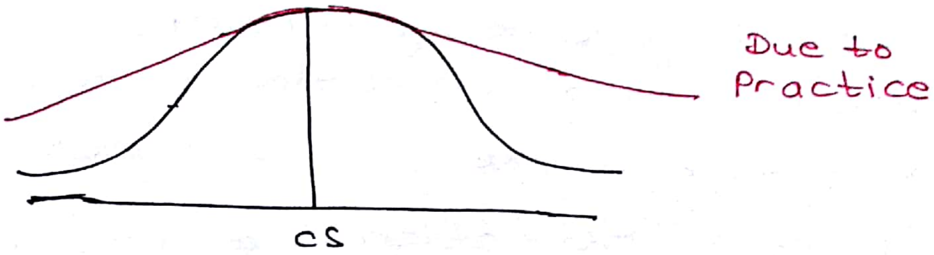
⇒Hypothesis say:
Failure of discrimination is generalisation

But actually, (i) Because I discriminate, I can generalise
• Animal can discriminate but it responds in hope of getting reward.
∴ Gen. is active process. Animal discriminates, yet it generalises.



(ii) The chances of being confused were highest with homophones yet gen. was better with semantic in mediated gen. Thus, discrimination is happening.

(iii) with practice



⇒ With practice, generalisation is more. (as there is more motivation)
↳ if 70 dB Bell has given rewards, 80 dB bell can also give rewards.

⇒ With more practice, the hope of reward with other frequencies will be more.

eg.	70dB bell	100 times 70 times reward	10 times 7 times reward
		✓ More gen.	

∴ Because I discriminate therefore I generalisation.

Extinction

Extinction is the process wherein reinforcement is ~~rem~~ reinforcement is removed following the occurence of a response that has been reinforced in the past. In other words, responses that were earlier reinforced are no longer being reinforced.

Factors influencing extinction

(i) **No. of reinforcements**

Greater are the no. of reinforcements that are given to an organism before extinction process is initiated, the higher is the resistance to extinction.

(ii) **Pattern (schedule) of reinforcement**

↳ Partial reinf. schedule produces greater resistance to extinction then continuous reinforcement schedule.

(iii) **Delay in reinforcement**

↳ If there is some delay in reinforcing the organism during acquisition trial, the resistance to extinction is likely to be higher.

(iv) Resistance to extinction is a decreasing function of the amount of effort the animal has to expand to produce responses during extinction.

⇒ if more effort is put into learning something, it is tough to unlearn it.

*Theories of Extinction

(i) **Response inhibition Theory**

(by Hull → based on the work of Pavlov)

Acc. to theory, 2 type of inhibitions:
(i) Reactive inhibition
(ii) Conditioned inhibition

⇒ fatigue & frustration → Reactive Inhibition
(animal loses motivation)

⇒ Acc. to Hull, reactive inhibition is temporary (spontaneous recovery happens)

⇒ Second time conditioned inhibition becomes stronger & eventually it dominates.

⇒ conditioned inhibition takes time thus, initially it is reactive inhibition (later on reactive inhibition vanishes and conditioned inhibition is present)

(ii) Competition Theory & Competition frustration Theory.

Competition Theory

⇒ After end of the incentive, the next best option will be chosen.

First theory is incremental behaviouristic, second one is cognitivistic.

⇒ Here, extinction will be faster.

⇒ The option with highest incentive value will be chosen.

* Competition Frustration Theory

⇒ Very high incentive during learning, when the incentive is stopped, extinction will be very fast.

→ This is also cognitive explaination of extinction

17-1

24-Dec-2018

Gestalt Approach to Learning

* Described learning from the side of perception.

(i) Phenomenal field
(ii) Isomorphism
(iii) Principles of organisation
(iv) Phi - phenomenon — focus on whole

(Taking care of unfinished business → by ensuring that gaps are filled)

⇒ Motivation comes because of unfinished work.

⇒ Every time I solve a problem, I learn something new. Learning & solving problem go hand in hand.

Problems are not solved because right kind of organisation is not present → Perceptual Re-organisation

↓

Equilibrium Attained

↓

Learning

•Field:- a cognitive map (in cognitivision)

⇒ Learning → change in the way I perceive the world.

*In Therapy → A patient will have unfinished business. Therapist will make them to have perceptual re-organisation.

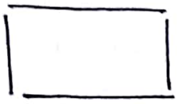
* **Basic principles of Gestalt Psychology**

(i) The phenomenological experience is diff. from the parts that make it up.
(eg. Least effort should be required in percepting a figure, → that figure will be considered good figure)

(ii) Our perceptual field is composed of organised wholes or Gestalten and this should be the subject matter of Psychology.

(iii) Gestalt Psychology applied field theory from physics to the problems of Psychology. Field can be defined as dynamic inter-related system, any part of which influences any other part.

(iv) Learning, like memory & perception, follow the law of Prägnanz. Learning tends to be complete and meaningful even when the original experience was not.



(we have tendency to fill the gaps)

(v) It was the result of Gestalt Psychology that the study of cognitive processes received encouragemen & importance in psychology.

Because ~~Gesta~~ Gestalt Psychologists were primarily field theorists interested in perceptual phenomena they looked learning as the spatial problem in perception.

Gestalt Psychologists assume that when the organism is confronted with a problem, a state of disequilibriu is set up & it continues, until the problem is solve Cognitive disequilibrium therefore has motivational properties that causes the organism to attempt to attain balance in the mental system.

It can be said that problems provide the stimuli which persists until the problems are solved at ~~which~~ that point, the maintaining stimuli terminates. Support for this was provided by Zeigarnik who found, incomplete tasks are better remembered than the completed ones. Learning acc. to Gestalt Psychologists is a cognitive phenomenon. The organism comes to reach the solution, only after pondering over the problem. Problem can exist only in 2 states:

(i) Solved

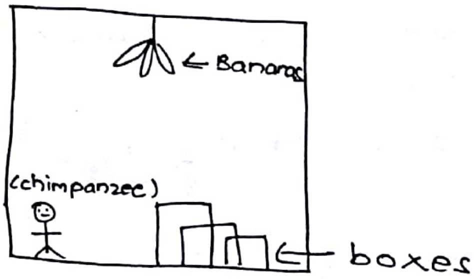
(ii) Unsolved

There is no partial solution.

Behaviourist approach ⟶ Incremental
Gestaltist " ⟶ All or None

* In Gestaltist Psychology, trial & error happens at mental level. Gestaltist believed that either a solution is reacher or it is not. Learning therefore acc. to them is discontinuous & they believe that solution to the problem can be reached only when insight has been developed which in turn requires perceptual reorganisation.

Köhler Experiment



There are 4 characteristics of insight learning: (i) The transition from pre-solution to solution is sudden & complete.
(ii) The performance based on a solution gained by insight is usually smooth & free from errors.
(iii) The solution to the problem gained by insight is retained for a considerable length of time.
(iv) The principle gained by insight can easily be applied to other problems.

→ Learning should always be relativistic

Programmed Learning

Behaviourist's contributions to learning → (i) Reinforcement
(ii) S-R association
(iii) Molecular approach

Prog. Learning will have relation to behaviourism (all 3 contributions) but improvement were made by cognitivis and then constructionism.

To maintain cognition & Motivation ⇄ self pacing is required ⇒ Individualisatio of Education

- Regular Testing → active involvement of the learner
- Feedback → both descriptive & prescriptive (remedial)
- Prog. learning prevents dealing with large amount of data. Rather it deals with small units of data. (small steps in learning)

Adv. in Teaching
(i) Ability
(ii) Interest
(iii) Motivation
(iv) Evaluation Apprehension
(v) Attention

- Reduces Anxiety → Locus of control is internal

* It provides structured & organised input.

* Programmed learning emanated from Skinner's work (behaviourism)

In Learning
* Individual diff. → ~~cognitive~~ teaching as per individual's ability.

Pressey ~~Stan~~ developed a teaching machine which was later used by skinner.

⇒ Prog. learning is not very effective in ~~explaining~~ teaching creativity.

*Art. Intelligence has given ~~a~~ new vigour to programmed learning.

Prog. Learning (Behaviourism) $\xrightarrow[\text{constructionism}]{\text{cognitivism}}$ Self Instructional Learning is also advanced form of Prog. Learning

* Ind. differences are taken care by self pacing & anxiety management in prog. learning.

* Learning is done frame by frame (small units).

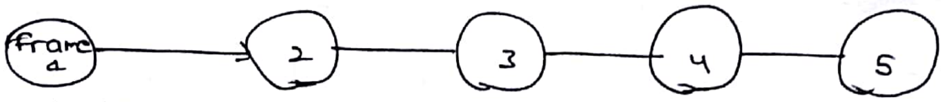
*Feedback is remedial in nature.

* Task analysis and the requirements for the task are provided.

Teacher → Programmed ~~&~~ Instruction
Student → " Learning

* Skinner → Linear
* Crowder → Branched

Linear



Introduction
(Test after each frame)

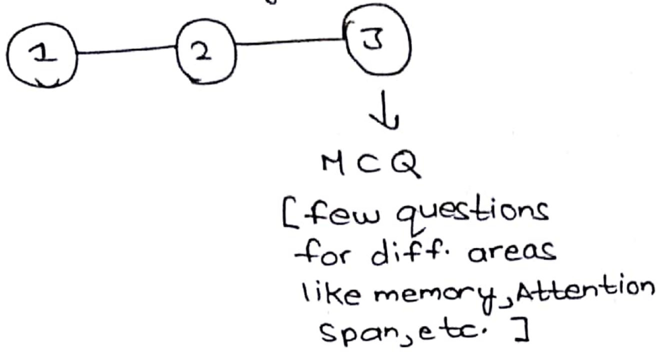
*Self-pacing as movement from one frame to another depends upon ~~the~~ individuals level of learning.

Modified Linear Prog.

Pre-Test → to determine to which frame the individual belongs.

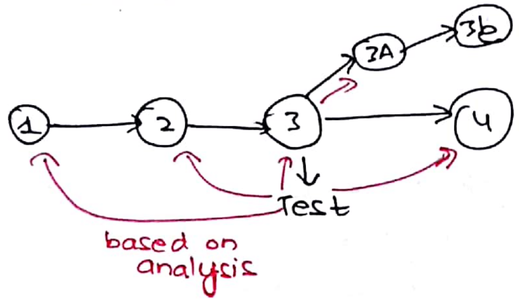
↳ Now, no need to repeat frames if you already ~~know it~~ are at higher level of ~~lear~~ knowledge & ability.

Branched Programming


1
2
3
MCQ
[few questions for diff. areas like memory, Attention span, etc.]

After the test, learner gets his complete learning profile.

⇒ Based on the test, learner can be asked to go to frame ①, ②, ③, ④ or even (3A) → A new branch


1
2
3
3A
3b
4
Test
based on analysis

* Item Branching :- Person will advance to next level only if previous level is cleared eg. question on thinking will be given if question on memory are answered. [This helps in profiling of the individual]

$x \longrightarrow x+1 \longrightarrow x+2$

level of difficulty

* Pre-test concept is in Branched Prog. also.

* Prog. Learning now has become student or learner centric → This led to dev. of self-instructional learning (student can learn on his own)

* Programmed learning is a method of giving individualised instructions and in this method the student is active & proceeds at his own pace & is provided with immediate knowledge of result. Physical presence of a human teacher is not required in this method. Prog. learning involves any machine or other

device as a technical aid to learning. It has behavioristic underpinnings with the focus on task analysis in which the learning task is broken into small frames which are linked together. In prog. learning method, the learner proceed at his own pace & is actively involved in the process of learning. The imp. features of prog. learning are:

(i) Small steps
(ii) immediate feedback
(iii) Self pacing
(iv) Overt responding
(v) Student testing
(vi) Fixing principle

(Once the feedback is provided, the learner has the appraisal of what he has learnt. The founder of this principle believed that once the concept is understood, it gets fixed in the student's memory)

(vii) Task analysis

(The analysis of how the task is accomplished including a detailed description of mental & manual activities to be performed by the learner.

25-Dec-2018

Instructional Design Model] to facilitate learning

we identify

initial state ⟶ SubGoal$_1$ (sub goal states) $\xrightarrow{\text{Operators}}$ SG$_2$ ⟶ SG$_3$ ⟶ Goal states

Initial state $\xrightarrow[\text{(through sub goals states)}]{\text{operators acting}}$ Goal state

* Instructional design is a practice of creating practice tools & content to help facilitate learning most effectively. The process broadly consists of determining the current state and the needs of the learner & defining the end goals of instruction & creating some intervention to assist transition.

As a field, instructional design is historically & traditionally rooted in cognitive & behavioural psychology.

→ Much of the foundation of the work was laid in WWII when US military faced the need to rapidly train large no. of people to perform complex technical tasks. Drawing on the research & theories of BF Skinner on operand conditioning, training programmes focused on observable behaviours. Tasks were broken down into subtasks & each subtask was treated as separate learning goal. Tasks were designed to reward correct performance & remediate incorrect performance. After the war, the success of wartime training model was replicated in business & classroom training.

There are many inst. design models but the most popular is Addie model which consists of following steps:

(i) analysis
(ii) Design
(iii) Development
(iv) Implementation
(v) Evaluation

(i) Analysis

We analyse the learner charateristics and the tasks to be learned. The issues that are to be addressed

(a) Who is the target audience?
(b) What skill deficiencies exist in the target?
(c) How do skills connect with the organisational goals?
(d) What are the delivery methods?
(e) What constraints exist?

(ii) Design

It involves complete design of learning solution choosing an appropriate learning approach. The imp. activities in this phase are — a) selection of an appropriate media.
b) writing of the learning ~~of~~ objective & designing of the modules with its corresponding lessons.
c) Designing the app. course content.
d) Determining what interactions will be effective These interactions should encourage the learner to explore further.
e) Learning the activities that allow the students to construct app. psycho-social env.

(iii) Development

In the dev. phase, the focus is on creating effective instructional & training material.

(iv) Implementation

The developed course is administered to the target audience. Delivery env. is prepared for the implementation of the course.

(v) Evaluation

In this phase it is decided whether the course is effective & whether it satisfies course objectives. In this phase, feedback is sought from the learners. Eval. is done continuously both during the dev. & the delivery.

*Q) Programmed learning has progressed from being a product centric approach to becoming a process centric approach & in this transition technology has played an imp. role. ~~Discu~~ Discuss.

Q) The advent of computer technology has changed the face of programmed learning. Discuss

1+2+3 = 6 ⇒ gave answer ⇒ product centric

⇒ how added 2+1 first or 2+3 first ⇒ Process Centric

*Till it was product centric, it was not diagnostic but when it became process centric, it became diagnostic.

⇒ With computer ⟶ proper records can be kept & ~~an~~ proper analysis can be done.

B — C —— C

Beh. (Active)

Cog. (More Active)

contructivist (more process oriented) (Most Active)

Cognitive Learning

- Sign Gestalt Theory of Tolman
- Observation Learning of Bandura

Learning

Behaviouristic	cognitivistic
(a) Learner is passive	(a) Learner is active
(b) Learning is incremental	(b) All or None
(c) Physical Trial & error (overt)	(c) Mental trial & error (if any) (covert)
(d) Reinforcement	(d) Vicarious reinforcement (indirect)
(e) Env. Determinism	(e) Triadic reciprocal Determinism
(f) Relatively permanent change in behaviour	(f) Relatively perm. change in information processing
(g) Information is stored in muscle memory	(g) Information is stored in schema
(h) S – R (motor skills)	(h) S – O – R
(i) It can explain simple behaviours.	(i) It can explain complex behaviours

*What is cognition?

⇒The literal meaning of cognition is knowing. Cognition is the processing of information obtained through our senses. Cognitive processes involve:

(i) Selection of information

(ii) Making alteration in selected information

(iii) Associating the items of information with each other.

(iv) Elaboration of information in thought.

(v) Storage of info. in memory

(vi) Retrieval of stored info. when needed

Cognitive learning therefore is the change in the way in which information is processed as a result of experience the person has had or is having.

* Sign Gestalt Theory (Tolman)

* Tolman → Bridge between behaviourists & Gestaltists

Behaviourist

a) He rejected the Psychology of pure phenomenology

b) He accepted the use of experimental methodology.

c) Favoured animal study (controls can be exercised)

d) He tried to develop general laws (but was not very successful)

Gestaltist

a) He favoured molar approach. He rejected psychology of twitchism (S – R approach)

b) He regarded behaviour as purposive (i.e. goal directed)

[His behaviourism is called Purposive Behaviourism]

Sign-Gestalt

Intervening variables present in the organism.

S — ○ — R

- Learning involves establishing sign Gestalten i.e. what leads to what.
- sign — sign

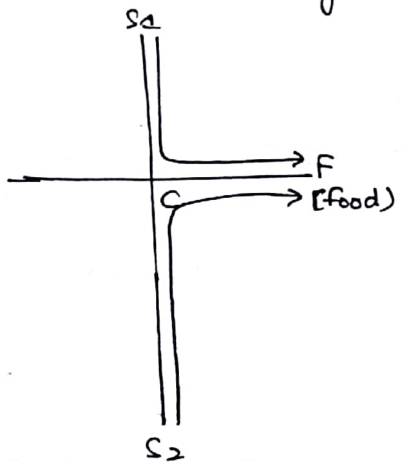
- Learning involves establishing cognitive maps with Sign Gestalten.

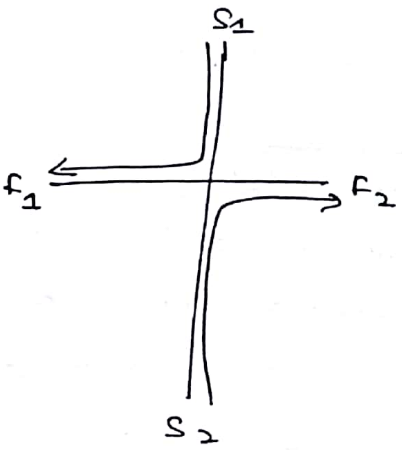
- Every learning involves expectations

Cognitive Maps → Sign Gestalten → It is the learned relationship bet. environmental cues & individual's expectations

*3 Experiments of Tolman

(1) Place Learning Experiment
(2) Reward Expectancy
(3) Latent Learning





Maze

(Place learning)

[Better]

(cognitive Learning)

(More time taking but this learning would be better as the rat develops a map of the place)

Maze

(Response Learning)

(Motor Learning)

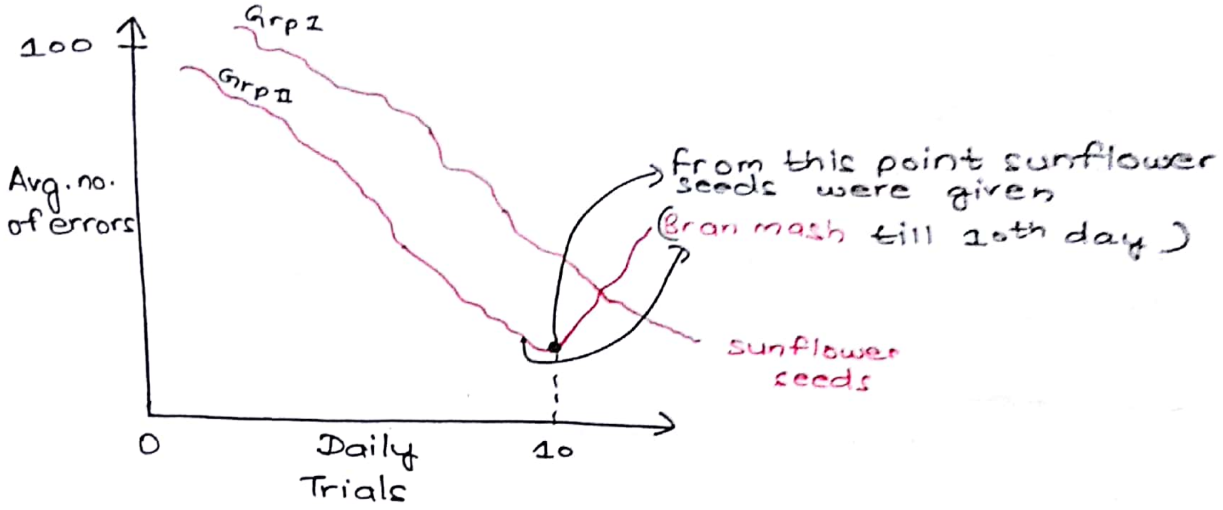
(Here, rat only has to learn the response of turning right)

⇒ Response Learners → rote learning & then reproducing verbatim the contents of a book

⇒ But wherever complexity is involved, map making is better. 184

*eg Map is far better than providing directions (Go right then left) in complex situations.

(2) Reward Expectancy experiment



*Bran Mash was the preferred food for the rats. (more frustration here)

⇒ Errors suddenly shot up when reward was taken up

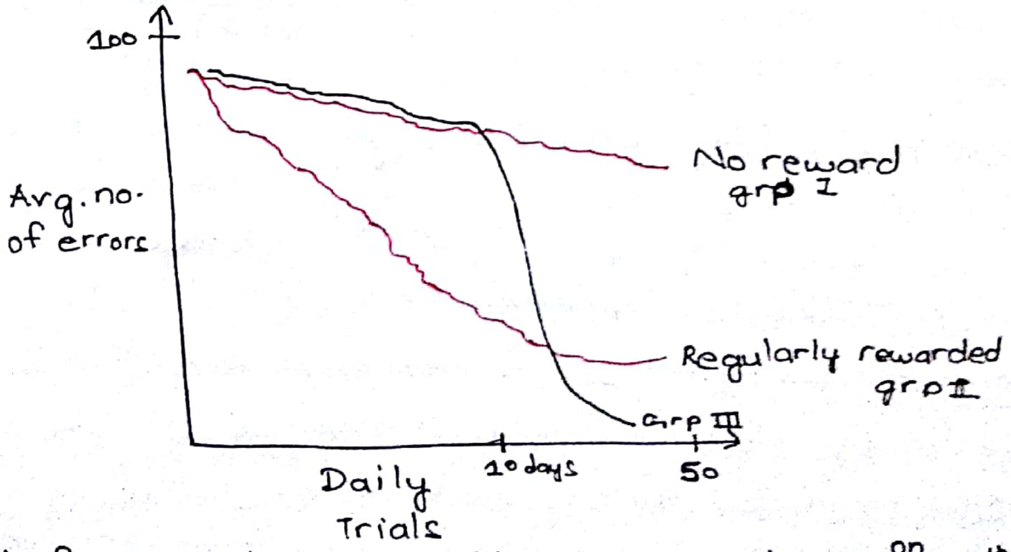
⇒ Each ~~learner~~ reinf. will have diff. value. [sudden change shows that it is cognitive learning & not conditioni

~~(3) Latent Learning Experiment~~

⇒ This shows the role of expectation

(3) Latent Learning Experiment

↳ Learning goes unobserved and is revealed only when the conditions are right.



(No reward for 10 days and then reward ~~after~~ on 11th days.)

⇒ This shows that learning happens without reinforcement

* It is possible for learning to continue without being displayed in overt action → There is diff. between learning & performance.

* Learning can take place in the absence of reinf. but not in the absence of motivation. This exp. shows that reinf. is not the only motivation.

* Reinf. only includes external events & not internal events.

☆ For Exam

S – S conditioning (Pavlov)

S – R 〃 (Skinner)

S – S learning involves both sign – sign (Gestalten) & ~~Skinner~~ Pavlov also (if the term conditioning is not mentioned)

⇒ (No concept of incremental learning & schedule in cognitive learning.)

6 Types of Learning given by Tolman

1. Cathexes

↳ tendency of the individual to seek certain goals than certain others when experiencing the drive.

eg. eating a certain type of food when hunger is experienced

(term was coined by Freud)

[energy is fixated in the goal & when the goal is achieved, the energy is ~~te~~ liberated.]

↳ fascination for the goal is ~~created~~ developed

↳ More towards Behaviouristic approach.

2) Equivalence Beliefs

↳ similar to conditioned reinf. → by Skinner

They are not merely the beliefs that reward & punishment will be found in certain situation but also a cognition that certain situations are equivalent to rewards & hence by themselves rewarding and vice versa.

(3) Field Expectancies

They are the cognition about what leads to what. They are made up of sign Gestalten & they provide us with the layout of the env. around us.

26-Dec-2018

(4) Field cognition Modes
(5) Drive ~~discription~~ discrimination
(6) Motor patterns

(4) Field cognition Modes

↳ strategy or a way of approaching problem solving situation.

↳ Tendency to arrange perceptual field in certain configuration.

↳ These strategies are innate but could be modiefie with experience.

↳ The strategy that works in one problem solving situation ~~are~~ is tried in future in other similar problem solving situations ⟶ Transfer of Training/Learning.

↳ field cognition modes are responsible for our biases in learning certain things faster than certain others.

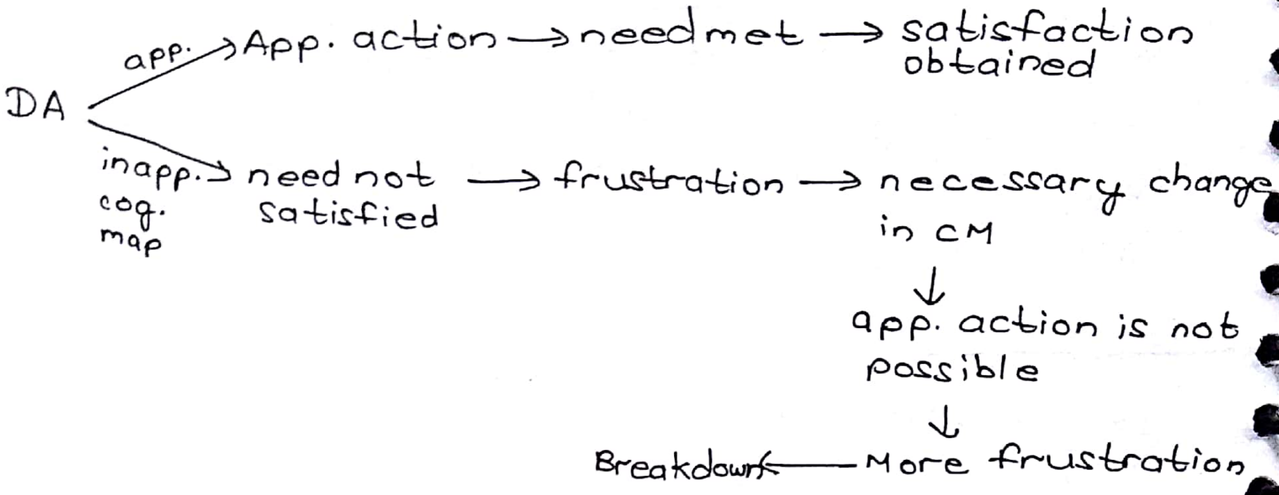
(5) Drive Discrimination

↳ An organism can determine ~~his~~ its own drive state & respon accordingly.

(i) Organism is able to recognize its drive state
(ii) Relate the drive with the appropriate cognitive map

3) Execute the appropriate action & obtain satisfaction

4) Obtain satisfaction


DA
app.
App. action
need met
satisfaction obtained
inapp. cog. map
need not satisfied
frustration
necessary change in CM
app. action is not possible
More frustration
Breakdown

(6) Motor patterns

- ↳ Trial & error learning
- ↳ motor based learning actions

* Critical Evaluation of Tolman

If we consider the broad range of variables that Tolman took into account, we can probably conclude that he was the greatest Learning theorist. Tolman discussed the kind of laws Psychology needs but he did not develop these laws. He did experiment to demonstrate that cognitive formulation were better than connectionist ones but he did not make his formulations precise enough to be really useful for prediction. He pointed the way towards the extension of cognitive theory to include the best aspects of connectionist theory but he did not carry his program through. He is therefore open to same criticism as other cognitive theorists that he did not provide us the basis for objective prediction of behaviour.

Bandura's Theory

Bandura's Theory (famous for Bobo Doll Exp.)
→ Response consequences
→ Observation Learning

*Salient features of Bandura's Theory

(i) We can learn by seeing models being reinforced.

↳ Learn from the consequences that the actions of others have resulted ~~from~~ for them

(ii) Reinforcement facilitates learning but is not an essential condition for it.

(iii) Learning has its roots either in direct reinf. and/or vicarious experiences.
(indirect)

(iv) People can learn without performing the behaviour.

↳ There is a difference between learning & performance

(v) Complex behaviour ~~rer~~ involves cognitive mediation

(vi) Reinforcers do not follow automatically from the consequences of the response.
(brain comes into picture whether a reinforcement is considered a reward or not)

* Response consequences

Skinner → one who controls the reinf. controls the behaviour

Bandura → " " " " model " " "

⇒ Every response consequence ~~had~~ has cognitive mediation.

Response Consequences → (i) impart information
→ (ii) motivate future behaviour
→ (iii) reinforce present behaviour

(i) impart information

* Action → outcome

• Apply mind on the outcome → outcome will be assesed
↳ considered reward or punishment

(Based on outcome, decide whether info. was correct)

⇒ Learner is active → will apply mind everywhere

(ii) motivate future behaviour
(pre-emptive action)
↳ anticipate the consequences in advance & take action
→ if reward is achieved
↳ repeat the behaviour in future
↳ serves as a role model for others

(iii) reinforce present behaviour
↳ take an action in the present & get reinforcement as a consequence (very similar to Skinner's app., only cognitive involvement is also considered)

* Observation Learning (also called modelling)
↳ (i) Learn new behaviours
↳ (ii) reinforce allready existing behaviours
↳ (iii) Remove maladaptive responses
↳ (iv) Perfect existing behaviours

⇒ • One can be reminded of the behaviours one has not recently performed

(v) Learn that every action has some consequences

⇒ It is neither imitation nor identification

Not imitation as (i) learner is active

(ii) He observes the consequences of the action.

(iii) Makes an evaluation about how relevant these consequences are ~~to~~ for him.

(iv) Modification in the observed behaviour to suit his needs.

*Not identification as:

Identification	Obs. Learning
(i) Unconscious process	(i) Conscious process
(ii) Adoption of behaviour with change	(ii) Modifications are done in the behaviour

Factors influencing modeling

(i) Characteristics of the model
(ii) ″ ″ ″ observer
(iii) Consequences of modeling behaviour

(i) Characteristics of the model

↳ (a) status → higher status, high modeling
(b) Prestige → ″ prestige, ″ ″
(c) Credibility → ″ credibility, ″ ″
(Trustworthiness)
(d) Nurturance → ″ nurturance, ″ ″
(those who care for you)
(e) Similarity → ″ similarity, ″ ″
(physical + values)
(f) Attractiveness → ″ attractiveness, ″ ″
(g) Power → ″ Power, ″ ″

(ii) Characteristics of the observer

a) Status ↓

b) Efficacy ↓

c) Power ↓

d) Gender [Due to patriarchal society, women will indulge in more obs. learning]

e) Age ↓

Q) Elucidate relationship bet. self esteem & modeling?

Ans = → Very low self-esteem → imitation & not modeling.

→ Self esteem should ~~b~~ be relatively lower than the model but not very low.

Q) Modeling is first hand & imitation is second hand. Discuss

Ans = →Result of Modeling will be diff. for different people as they will do diff. modifications before adopting the behaviour of the model.

Q) How can modeling lead to increase in self-esteem?

Ans = (i) Model performed some behaviour & had -ve consequences, I refrained & avoided the -ve consequence.

(ii) After ~~ado~~ making modification before adopting a beh. and now I have become a model for others as ~~I~~ ~~ma~~ my modifications made the beh. more useful.

(iii) Adoption of model's behaviour → ↑ self esteem in general

Modeling in Therapeutic purpose

↳ no modifications should be done, rather the behaviour should be copied eg. in treatment of phobias.

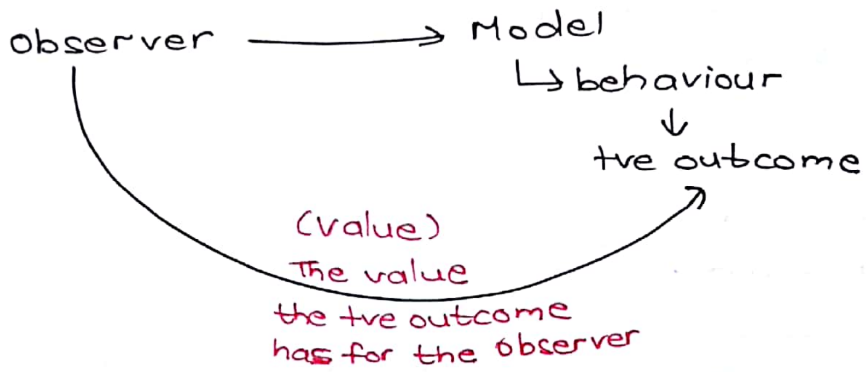
↳ Any other behaviour (not part of therapy) if copied will not be considered modeling eg. scratching head before handling python in therapy.

* Sometimes in exam Modeling & imitation can be used interchangably.

* Imitation is a conscious process but no thought process is involved unlike modeling.

*Consequences of Modeled Behaviour

If modeled beh. results in reward → highly desired reward → beh. will be repeated


Observer
Model
↳ behaviour
+ve outcome
(value)
The value
the +ve outcome
has for the observer

⇒ More the value, more chances of repetition of behaviour.

* Processes involved in modeling

(i) Attention
(ii) Retention
(iii) Motor Production
(iv) Motivation

(i) Attention

↳ deployment of concentration on the observed behaviour.

a) Interesting ↑
b) Distinctiveness ↑
c) Repetition ↑
d) Value ↑
e) Utility ↑

(ii) Retention

↳ ability to encode & store & retrieve required

→ put it in symbolic form → more symbolic, more retention

Symbols → Language, images & concepts

(iii) Motor production

↳ Display of the behaviour

(iv) Motivation

↳ motivation is necessary to reproduce the behaviour

Q) Bandura's theory of obs. learning highlights the imp. of antecedent & consequent determinants. Discuss.

Q) Successful learning requires the use of both foresight & insight.

antecedent → expectation
consequent → reinforcement

(This concept can be used in Ethics also)

Q) Antecedent & cons. determinants are both imp to ~~[illegible]~~ inculcate pro-env. behaviour in people. Discuss.

⇒ If foresight [expectations] (prediction) proves to be beneficial, insight is developed.

⇒ In foresight, expectations are ~~[illegible]~~ involved and when the expectations bring +ve outcome, insight is developed

⇒ foresight makes (insight, possible - development)

⇒ Insight once dev., can be used in new settings.

⇒ failure of foresight also leads to dev. of insight.

* Bobo Doll Exp.

(Bobo Doll was a punching bag)

↳ Those kids who saw aggresive film → showed ~~aggress~~ agressive beh.
" " " " altruistic " → " altruistic beh.

* Modeling can be symbolic or through movies also.

*(This theory went against freud's assertion that violence & sex seen on TV will lead to cathartic release.)

* This also leads to disinhibition & de-sensitisation towards sex & violence (if too much exposure)

* Bandura talked about 3 type of reinf. →
- Direct
- Vicarious
- Self-produced

***Direct**:- only you enjoy the reinf.

*vicarious:- others ~~also~~ " " "

* Self-produced (brought it closer to humanism)

↳ A lot of reinf. (both +ve & -ve) will be ineffective, if the person has decided.

eg. You saw 3-4 mountaineers ~~dying~~ died while trying to climb Mt. Everest but the person still decides to ~~g~~ climb Mt. Everest.

27-Dec-2018

Information Processing Approach

(i) Serial Processing
(ii) CPU
(iii) Human Cognitive system working compared with the working of the digital computer.

Learning – change in IP that occurs as a result of experience or practice.

Input – Process – Output

⇒ Info. Processing App. & cognitive app. are interchangable. Both came in 1950s after the advent of computers.

⇒ Info. Processing App. is associated with learning, memory, perception, etc.

⇒ given by Newell, Shaw & Simon

* Human beings also involve input → processing → output just like computers.

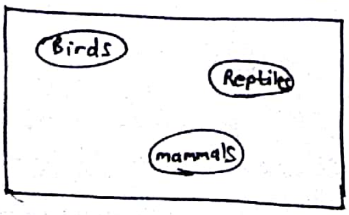
* Learning involves ~~the~~ a change in the way information is processed.

* It also includes S – O – R approach

* Learning, thinking, etc. involve Symbolic Manipulation.

⇒ ~~Connectionism was~~ Advancement of info. processing ~~exist~~ involved.
~~(i)~~ Neural Networking
or
~~(ii)~~ Parallel Processing
or
~~(iii) Connectionism~~

* Parallel Distributive Processing [Connectionism]



All the nodes get activated & judgement is made. ~~It~~

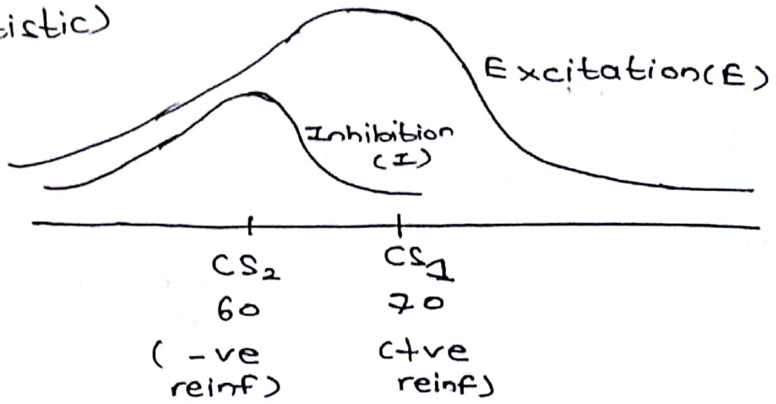
196

Connectionism → connections being made bet. diff. nodes.

Discrimination Learning

- Continuity (Behaviourism)
  - ↳ incremental process
  - ↳ Trial & error learning
- Non-continuity (cognitivism)
  - ↳ All or none
  - ↳ Hypothesis Testing
  - ↳ Problem solving exercise

* Continuity Theory (Absolutistic)



If E > I ⇒ respond

I > E ⇒ stop responding

- The graph has been made with the assumption that alot more trials were given for +ve reinf.

When we pair stimulus with +ve reinf ⇒ excitation
" " " " " -ve " ⇒ inhibition

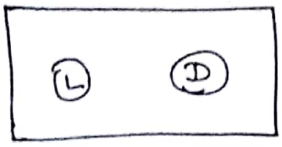
⇒ Both E & I keep becoming weaker as we move away from the stimulus where conditioning was done.

→ This app. is based on habit training → more reinf., stronger habit.

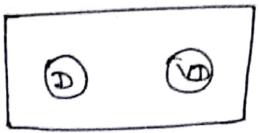
* Non-continuity Theory

↳ Animal forms a map in its mind

Light, Dark &
Very Dark
(Spence & Hull
Exp.)



I



II

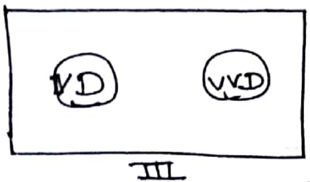
→ Animal was reinf. for Dark.

→ But in II case, the animal chose very Dark.

→ Animal had transposition → relational discrimination

→ In animal's cognitive map light, dark and the relationship between the two (relatively dark) will be present

→ If animal was following behaviouristic app., it should have not gone for VD. [Till here Gestalt]



(very very dark)

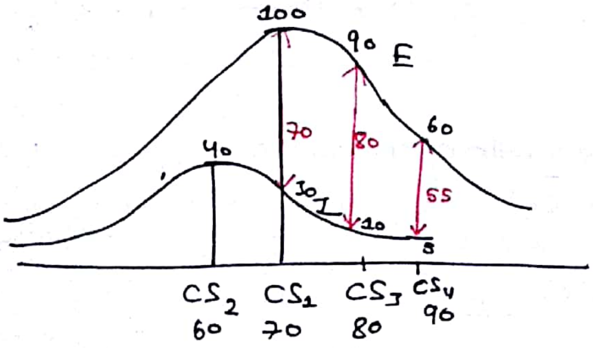
III

But here, animal chose VD → Reversal of Transposition

* Mostly human beings follow Gestalten Approach (owing to curiosity)

⇒ One explaination is that 'VVD' was a huge departure → the animal got confused.

* Spence's Explaination



[It is about net excitation i.e. E−I]

Thus, even if animal was not reinforced for 80, net excitation is large. Thus, animal responds.

At 80, drop in E was there but rate of decrease in I was more, this compensates for drop in E & net tendency is more.

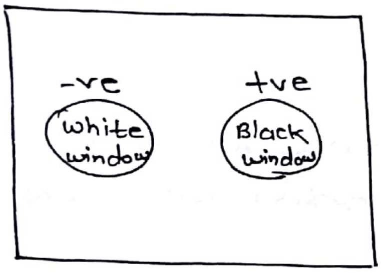
*Thus net tendency was higher at 80 and lower at 90.

* Spence's explaination involves Net Tendency

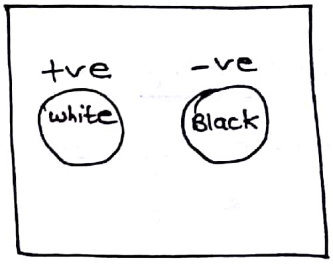
⇒ This brought the concept of interval between practic

Overpractice leads to fatigue → increase in inhibitory tendency.

⇒ (This explaination was behaviouristic)



I



II

For 20 trials → reinf. are reversed

" 200 " → " " "

* It was easy for the rat to adapt after 200 trials as its map was complete → changing after reversal of reinf. was easy.

* ~~In~~ After 20 trials, rat was still in the process of making map

⇒ Overlearning Reversal Effect

* (continuity) Trial & error will only work for less no. of trials, for large no. of trials, hypothesis formation is required → Hypothesis testing

⇒ Animal also ~~needs~~ wants to know where punishment is, so that it can avoid it.

* In infants → Discrimination learning through continuity

* But as we grow, we develop hypothesis testing

* Social learning

↳ Rotter
↳ Bandura

→ Skinner's concepts were based on study of animals in individual settings → This approach could not be applied to humans → Social Learning.

Social learning is based on (similar to obs. learning)
(i) Expectation
(ii) Anticipation
(iii) Hypothesis testing

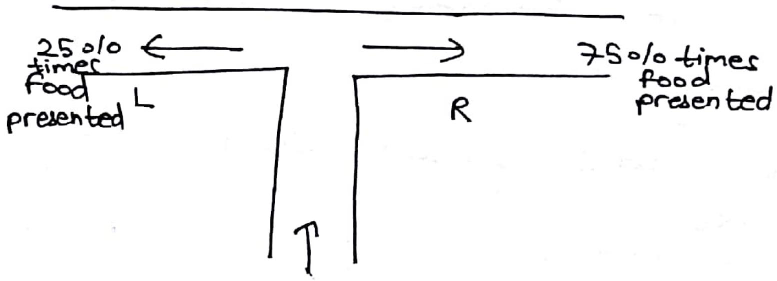
* Probability Learning

→ ~~Success~~ Matching of ~~obj~~ subjective probability with objective prob. (based on individual's experience)

→ Can we learn to match sub. & obj. probability.

→ Experience involves learning the art of knowing the probability of events in life.

T- Maze



⇒ Food is given randomly on a particular side (75% right & 25% right)

⇒ Expected was that it should turn right all the time but it was found that it turned right 75% times & left 25% → Probability Learning

* Ames et al Exp

(Room with a viewing hole)
↳ one side a tall boy & one side an adult ~~dw~~ dwarf.

→ The room was trapezoidal

→ But prob. is more ~~is to~~ to find ~~believe~~ that height might be diff. rather than the room to be trapezoidal

→ Thus, prob. learning makes us to ignore the abnormality of the room.

eg. People's behaviour is based on the prob. of punishment → Law & order is about the kind of prob. the citizens undergo.

*Brunswik.

↳ **probabilistic functionalism** (adapting to the env.) → we will pick up those behaviours first which will maximise our chances of operating in the environment successfully.